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Government of the Province of Saskatchewan

DEPARTMENT OF AGRICULTURE

THE CARE OF MILK AND CREAM ON THE FARM

(Extracts from Bulletin No. 15)

Dairy Produce Easily Perishable.

Milk, cream and butter are always best when strictly fresh. With age the flavour of these commodities deteriorates which is caused by a process of fermentation or decay brought about by the growth of minute forms of plant life generally called "germs," "bacteria," "microbes," "organisms" or "micro-organisms." There are only two methods of keeping them under control and preventing the development of objectionable flavours.

1. By doing one's work cleanly.
2. By prompt cooling to below a temperature of 50 degrees Fahrenheit.

Cleanliness.

These germs are associated with all kinds of dirt and dust particles which when admitted to the milk or cream load it with seed that, given a favourable temperature, will produce rank flavours and make it unfit for consumption in its raw state or for making first class butter. While it is impossible to prevent wholly their access, yet by having all utensils and wearing apparel clean, by milking in a clean stable or corral, by washing the flanks and udder of the cow before each milking, by milking with dry hands and by using a covered milk pail, the germ content may be reduced by at least 500 per cent.

Low Temperature.

The betterments commenced by practising cleanliness can be continued or perfected by the process of cooling. Germ development is retarded as the temperature of the milk and cream is lowered and practically stopped at 40 degrees. Thus by doing one's work cleanly in every respect from the place in which the cows are milked to separating the cream and cooling it within two hours to a temperature of 50 degrees

Fahrenheit or below, but preferably 40, the development of undesirable and objectionable flavours will be checked and the milk and cream will not only be more wholesome for consumption in its raw state but will also be more valuable for making butter either at home or at a creamery. At the creameries operated by the government cream is classified on the basis of flavour and three grades are made, viz.: Extra No. 1 or sweet, No. 1 and No. 2. The price per pound of butter fat for Extra No. 1 is three cents higher than the price for No. 1 and five cents higher than for No. 2. It is thus that the farmers are rewarded in a tangible manner for doing their work according to modern methods. The value of butter is determined by its flavour. It may be nicely made but if the flavour is strong the best trade does not want it.

Conditions that give rise to Objectionable Flavours.

Dirty hands, teats and udders when milking.
Damp, filthy, dark, unventilated stables.
Wet and dusty milking corrals.
Uncleaned and improperly cleaned separators and dairy utensils.
Separating the milk in stables.
Exposing the milk and cream in an impure atmosphere.
Milk standing in or near stables, corrals or foul surroundings.
Wooden, galvanised and rusty pails.

Conditions that Prevent Objectionable Flavours.

Wash or moisten cow's flanks and udder before milking and milk with dry, clean hands.
Provide for plenty of sunlight and ventilation in the stables, and keep the walls, ceiling and floor clean and dry.
In summer milk in a clean stable or grassy corral.
Wash the separator and dairy utensils after each milking, first in lukewarm water, then in hot water, and finish by scalding with clean boiling water or steam.
Separate the milk where the surroundings are clean and the atmosphere pure.
Cool the cream to 50 degrees or below within two hours after separating, using a thermometer to make certain of your work.
Keep the vessels covered.
Use only tin milking pails.
The covered pail is desirable.
Since a low temperature retards fermentation, the sooner milk is separated and the cream cooled the better the quality will be. At tempera-

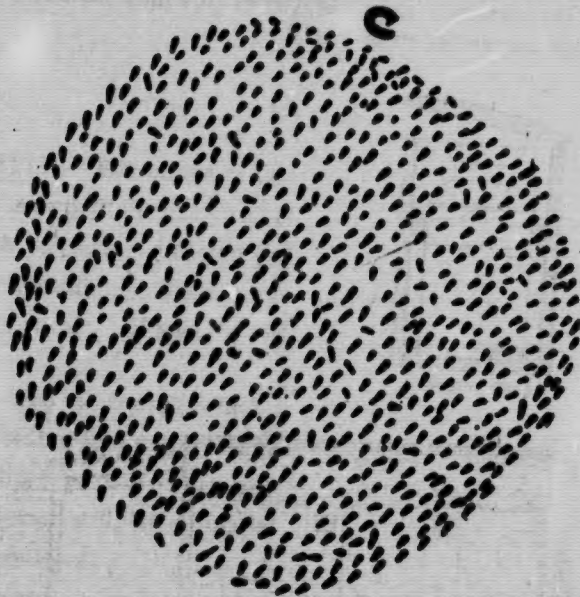


a. Single bacterium.

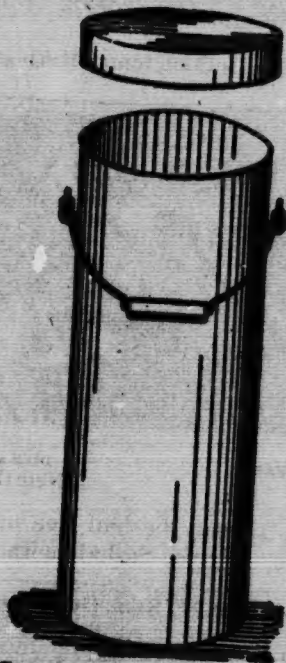


b. Progeny from growth of one bacterium in 24 hours in milk at 50 degrees of temperature. The increase is five.

tures between 60 degrees—100 degrees, the flavour changes very rapidly because bacterial growth is rapid; between 50 degrees—60 degrees, the change is much slower, while below 50 degrees it is almost checked. The limits of growth may be fixed at freezing point and 101 degrees Fahrenheit. In farm dairy work it is not practicable to adopt high temperatures to check the growth, consequently a low temperature is the only available means of retarding bacterial growth and thus preserving the fine flavours in milk and cream.



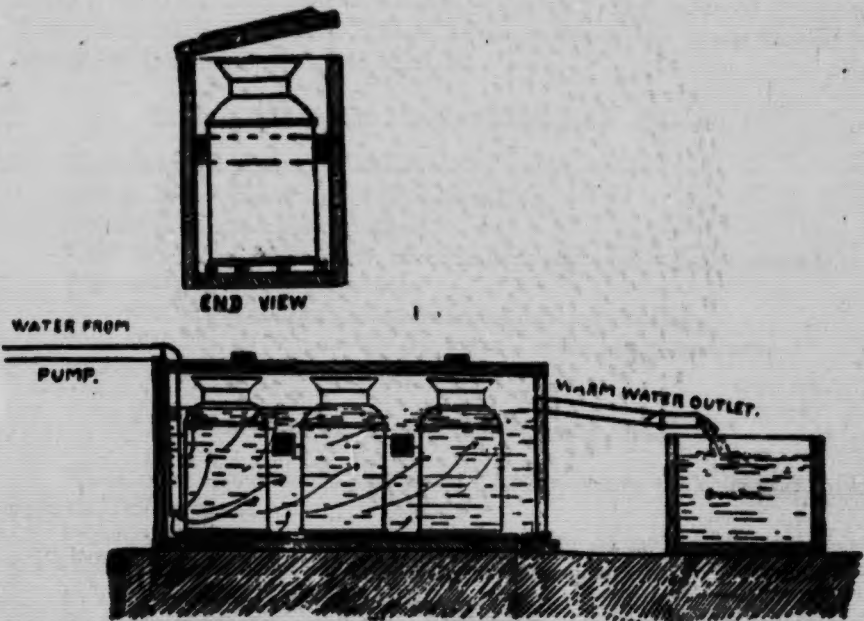
c. Progeny from growth of a bacterium in 24 hours in milk at 70 degrees of temperature. The increase is 750.



A. SUITABLE CAN IN WHICH TO COOL MILK AND CREAM.

Thermometers.

Every dairyman should use a thermometer because without it one must guess at the temperature. The practice of using one's finger to ascertain this is not modern or reliable. The cost of a thermometer is about twenty-five cents. Its accuracy can be determined by placing it under one's tongue for about two minutes when it should register 98 degrees. This is the approximate temperature of a person in good health. Whatever the thermometer may vary from this may be noted and subsequent readings corrected accordingly.



TANK FOR KEEPING CREAM COOL WHILE HELD AT THE FARM.



CLEANLINESS AND SUCCESS



DISEASE AND FAILURE
(Note the Dirt on Flanks)

Copy of Bulletin No. 15 may be had free upon application to the Department of Agriculture, Regina, Saskatchewan.

